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[54] **REAL TIME TOROIDAL PAN**

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Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 125,238, Feb. 27, 1980, abandoned.

[51] **Int. Cl.**[3] **G06F 3/153**

[52] **U.S. Cl.** **364/521**; 340/726; 340/792; 340/799

[58] **Field of Search** 364/521; 340/709, 711, 340/720, 723, 724, 726, 792, 799

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[57] **ABSTRACT**

This video graphics raster display system effectively facilitates panning over an image that is arbitrarily larger than the image memory from which the display is generated. To accomplish this, the image memory is addressable "toroidally", i.e., in modulo or wraparound fashion. Thus, if a memory address boundary is reached during a raster readout, the readout continues without interruption from the opposite boundary.

The image memory is slightly larger than would be required to store only the image currently being displayed. The excess memory area includes a border area, surrounding the current readout area, which contains image data that forms a continuation of the image currently being read out and displayed. This allows immediate panning into the border area. Further, the excess memory area includes a "rewrite area" on the other side of the border zone from the current readout area into which new, image continuation data may be entered while panning takes place. Appropriate circuitry facilitates new data entry to the rewrite area and controls the panning rate to ensure that the displayed image will not reach the rewrite area until after the new data has been entered.

28 Claims, 25 Drawing Figures